

**FACT SHEET**  
**GENERAL PERMIT FOR DISCHARGES OF STORMWATER FROM SMALL MUNICIPAL**  
**SEPARATE STORM SEWER SYSTEMS**  
**Prepared pursuant to 4VAC50-60-520**

The Virginia Soil and Water Conservation Board (Board) is ~~considering proposing to reissue the reissuance of a~~ General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) to the surface waters of the Commonwealth of Virginia. Regulations developed ~~pursuant to under the~~ federal Clean Water Act (CWA), 33 USC §§1251 *et seq.*, and the Virginia Stormwater Management Act, §§10.1-603.2 *et seq.* of the Code of Virginia, require that state permits be effective for a fixed term not to exceed five years §10.1-603.2:2 (B). The Board issued the existing general permit effective July 9, 2008 and it is ~~scheduled to will~~ expire on July 8, 2013, thus necessitating the promulgation of a new general permit at this time. The effective date of the ~~renewed draft~~ general permit will be July 1, 2013. Operators covered under the expiring general permit that wish to continue to discharge under a general permit must file a registration statement and have paid all applicable maintenance fees ~~for under the~~ current general permit for coverage under the new general permit prior to April 2, 2013. Coverage under the expiring general permit will end on midnight, June 30, 2013. Operators of small MS4s who are seeking new permit coverage under this general permit during its term are required to register with the Department by filing a complete registration statement and paying the applicable permit fee.

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[Either upfront or elsewhere in this fact sheet, recommend including an overview and supporting rationale for any major changes between the current and the proposed general permit for small MS4s.]

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**Permit Number:** VAR04

**Name of Permittee:** Any operator of a qualifying small MS4 who discharges to the surface waters of the Commonwealth of Virginia.

**Facility Location:** Commonwealth of Virginia

**Receiving Waters:** Surface waters within the boundaries of the Commonwealth of Virginia, except those specifically named in the Virginia State Water Control Board or Board regulations, which prohibit such discharges.

**Discharge Type:** Stormwater discharged from regulated small MS4s

On the basis of preliminary review and application of lawful standards and regulations, the Board proposes to reissue this general permit subject to certain conditions. ~~The Board has determined that this category of discharges is appropriately controlled under a general permit. The category of discharges to be included involves facilities with the same or similar types of operations that discharge the same or similar types of stormwater. The draft general permit requires that all covered facilities meet standardized effluent limitations and monitoring requirements.~~

**I. Facilities and Activities Subject to this General Permit**

This general permit will cover stormwater discharges from small MS4s to surface waters of the Commonwealth. Generally, unless ~~an individual system~~ the MS4 qualifies for a waiver, ~~it a small~~ MS4 is regulated if it is operated by a federal, state, tribal, or local government entity and is located in

**Comment [KWA1]:** Given that VDOT is a non-traditional MS4 by definition, see e.g., EPA, MS4 Program Evaluation Guidance (Jan. 2007) at 8 and recent EPA regional inspections of transportation facilities which identified that VDOT (along with other state transportation authorities) conducts significantly different operations than those more traditional municipal-type permittees for which the Phase II general permit was written, DCR should issue a separate, individual state-wide permit to VDOT for MS4 coverage. Permitting VDOT under its own individual permit would allow permit conditions to be tailored to the day-to-day operations unique to the transportation sector, while at the same time ensuring that the permittee has the ability to comply with the terms of the permit.

an urbanized area as determined by the latest Decennial Census by the Bureau of the Census. If the small MS4 is not located entirely within an urbanized area, only the portion that is within the urbanized area is regulated.

An MS4 may additionally become regulated if it is the subject of a petition to the Board to require a state permit for its discharge of stormwater. If the Board determines that an MS4 needs a state permit and the MS4 operator applies for coverage under this general permit, the operator is required to comply with the state permit requirements. The operator may alternatively choose to apply for and obtain coverage under an individual permit as allowed by 4VAC50-60-400.

Additional designations based on subsequent census years will be governed by the Census Bureau's definition of an urbanized area in effect for that year. MS4 operators identified as being located in an urbanized area as a result of the 2010 Census will be required to obtain permit coverage under this general permit. These operators will be required to submit a complete registration statement within 180-days after official notification by the Department.

## **II. Type and Quantity of Discharge Authorized**

This general permit authorizes discharges of stormwater from small MS4s to surface waters within the boundaries of the Commonwealth of Virginia, except those specifically named in Board regulations or policies that prohibit such discharges. The Board has determined that this category of discharges is appropriately controlled under a general permit, as the category of discharges to be included involves facilities with the same or similar types of operations that discharge the same or similar types of stormwater.

## **III. Legal Basis for Draft Permit Conditions**

The General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems is a state permit issued through regulation by the Board pursuant to the federal Clean Water Act and the Virginia Stormwater Management Law.

Requirements set forth in the federal Clean Water Act (33 USC §§ 1251 *et seq.*), formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972, Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483, and Public Law 97-117, or any subsequent revisions thereto, and its attendant regulations set forth in 40 CFR Parts 122, 123, 124 and 125, require states to establish a permitting program for the management of stormwater from MS4s, municipal separate storm sewer systems (MS4s).

The basis for this general permit under state law is the Virginia Stormwater Management Law, §10.1-603.2 *et seq.* of the Code of Virginia, and the Virginia Stormwater Management Program (VSMP) Permit regulations, 4VAC50-60-10 *et seq.* Specifically, §10.1-603.2:1 requires the Board to permit, regulate, and control stormwater runoff in the Commonwealth. In carrying out its responsibilities, the Board may issue, deny, revoke, terminate, amend and enforce state permits for the control of stormwater discharges from Municipal Separate Storm Sewer Systems (subsection 1), adopt regulations (subsection 2), and otherwise act to ensure the general health, safety and welfare of the

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citizens of the Commonwealth as well as protect the quality and quantity of state waters from the potential harm of unmanaged stormwater. Additionally, §10.1-603.2:2(A) states that it is unlawful to cause a stormwater discharge from an MS4 except in compliance with a state permit.

#### **IV. Alternatives to Required Standards**

Discussion of alternatives to the required standards of the draft general permit is contained in Section VI below.

#### **V. Public Comment and Procedures for General Permit Adoption by the Board**

Persons may comment in writing on the proposed issuance of the general permit during the public comment period, which will commence on November 4, 2012 and end at 5:00 p.m. on January 4, 2013. The Board will consider only those comments received within this period. Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Comments should be addressed to the contact person listed below:

The Regulatory Coordinator  
Virginia Department of Conservation and Recreation  
203 Governor Street, Suite 302  
Richmond, Virginia 23219

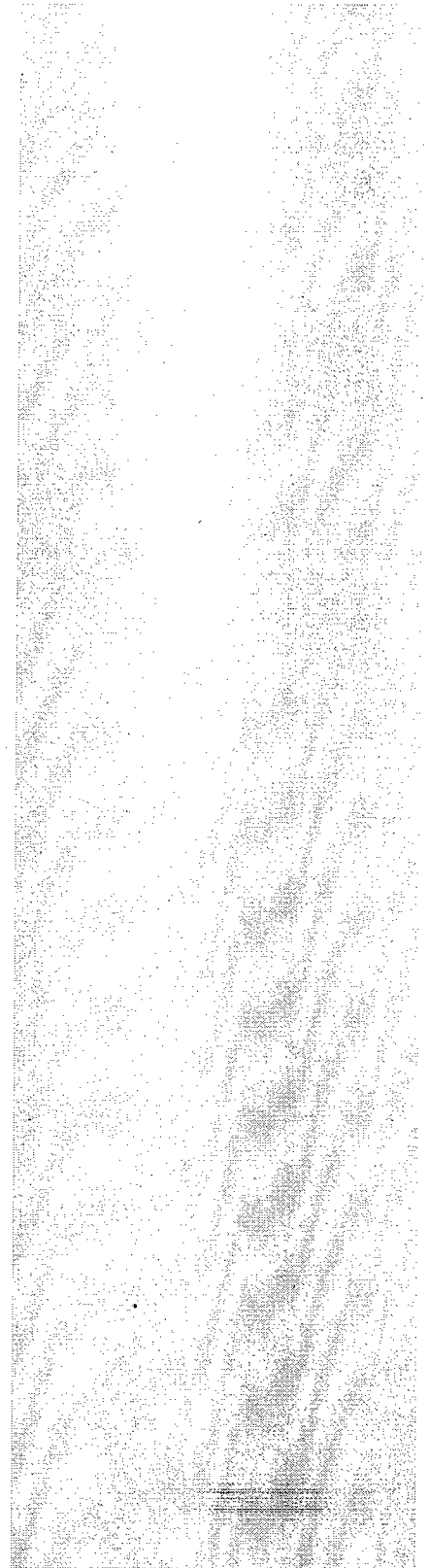
Comments may also be faxed to the Regulatory Coordinator at (804) 786-6141 or be e-mailed to [regcord@dcv.virginia.gov](mailto:regcord@dcv.virginia.gov). Electronic comments may be submitted on the Virginia Regulatory Town Hall by clicking on the "proposed" stage and selecting "comment period" at: <http://www.townhall.virginia.gov/L/viewaction.cfm?actionid=3634>. All written comments must include the name and address of the commenter (e-mail addresses would be appreciated also). In order to be considered, comments must be received by 5:00 PM on January 4, 2013.

All pertinent information regarding this proposed regulation can be obtained at <http://www.dcr.virginia.gov/lr3e.shtml>. Hard copies are on file and may be inspected. To make arrangements for inspection and copying, or for additional information, contact Mr. David Dowling at (804) 786-2291.

Public hearings to receive comments on the proposed general permit regulations ~~will be~~ held:

- At 1:30 p.m. on December 3, 2012 at the Virginia Department of Alcoholic Beverage Control Hearing Room, 2901 Hermitage Road, Richmond, Virginia 23320;
- At 10:00 a.m. on December 5, 2012 at the Roanoke City Council Chambers, Noel C. Taylor Municipal Building, 215 Church Avenue Southwest, Roanoke, Virginia 24011; and
- At 1:30 p.m. on December 7, 2012 at the Spotsylvania County Public Schools' Administration Board Room, 8020 River Stone Drive, Fredericksburg, Virginia 22407

Notice of the public hearings ~~was will be~~ published in newspapers and in the Virginia Register. ~~Now that the public hearing comment period has concluded, Following the public hearing comment period,~~ the Board will make its determination regarding adoption of a final general permit regulation.



## **VI. Explanation of Conditions and Limitations**

### ***A. Utilization of Narrative Effluent Limitations***

The Board considers narrative effluent limitations requiring implementation of Best Management Practices (BMPs), rather than water quality based standards, to be the appropriate form of effluent limitations for MS4s. CWA section 402(p)(3)(b)(iii) establishes a process for narrative rather than numeric effluent limits for MS4s, for example, by reference to "management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." 33 U.S.C. § 1342(p)(3)(B)(iii). Additionally, it is not technically feasible to establish numeric effluent limits for MS4 stormwater discharges. The variability in the system and minimal data generally available make it difficult to determine with precision or certainty actual and projected loadings for individual dischargers or groups of dischargers. This could lead to overly or insufficiently stringent general permit requirements, such as and-excessive and expensive controls on stormwater discharges that are not necessary to provide for attainment of WQS. Conversely, an inadequate effluent characterization could lead to water quality-based effluent limitations that are not stringent enough to provide for attainment of Water Quality Standards (WQS).

Water quality-based effluent limits are based on low flow conditions for end-of-pipe discharges. MS4 discharges are not end-of-pipe and are highly variable. For example, the highest concentrations are often found in the first flush, which are not low flow conditions. Low flow condition assessments are not applicable to stormwater discharges from an MS4. Stormwater discharges are also variable based on the storm event itself, with varying flow conditions on a two-year, ten-year, or 100-year event.

### ***B. MS4 Programs and Iterative Process***

The CWA specifies that National Pollutant Discharge Elimination System (NPDES) permits for discharges from MS4s "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods." CWA Section 402(p)(3)(B)(iii).

MS4 operators need flexibility to optimize reductions in stormwater pollutants on a location-by-location basis given the unique local hydrologic and geologic concerns that may exist and the differing possible pollutant control strategies.

Continued implementation of MS4 Programs through an iterative process will lead to protecting water quality and protection of water quality standards, with an ultimate goal of standards attainment. The MS4 Program is based on the premise that systems should continually adapt to current conditions and BMP effectiveness, and operations should be protective of WQS. Therefore, each operator will determine appropriate BMPs to satisfy each of the six minimum control measures through an evaluative process. This evaluative process will consider such factors as conditions of receiving surface waters, specific local concerns, and other aspects included in a comprehensive watershed plan. Other factors may include MS4 size, climate, implementation schedules, beneficial uses of receiving

surface water, hydrology, geology, and capacity to perform operation and maintenance. In cases where adequate information exists to develop more specific conditions or limitations to meet WQS, these conditions or limitations are to be incorporated, as necessary and appropriate. Successive iterations of the mix of BMPs and measurable goals will be driven by the objective of assuring maintenance of WQS; this proposed permitting approach anticipates expanded or better-tailored BMPs in subsequent general permits, where necessary, to provide for the attainment of WQS. The Board presumes, absent evidence to the contrary identified as an approved Total Maximum Daily Load (TMDL) wasteload allocation prior to the effectiveness date of this general permit, that a small MS4 program that implements the six minimum measures in this general permit does not require more stringent limitations to meet WQS.

Operators of small MS4s are required to develop, implement, and enforce a stormwater management program, referred to as an "MS4 Program." The MS4 Program must include an MS4 Program Plan that includes the six minimum control measures and special conditions for waters where the MS4 discharges were identified as causing or contributing to an impairment as a result of being allocated a wasteload in an approved TMDL. The operator will be required to develop and implement appropriate BMPs to satisfy each of these required measures, which are described as follows:

1. Public education and outreach on stormwater impacts.

This general permit defines the expectations of public education and outreach programs for MS4 operators. In order to ensure development of clear and concise messages to the public, this general permit requires selection of three priority issues by the MS4 operator. This general permit provides flexibility in selecting the priority issues so that the MS4 operator can identify those most appropriate for the MS4. The general permit requires that the MS4 operator design and implement outreach issues aimed at reaching 20% of the estimated target audience for each message annually. The general permit allows for coordination between MS4 operators and requires evaluation of the delivery methods to ensure that the target audiences are adequately reached.

2. Public involvement/participation.

Given the ever increasing expectations of MS4 programs, public involvement and participation is a major component in program implementation. The public must be made aware of and participate in the MS4 operator's program implementation. As a result, this general permit requires that an updated MS4 Program Plan and associated annual reports are maintained on-line for public access. In addition, MS4 operators will be required to notify the public of the ability to comment on their MS4 Program Plan that will be submitted as part of the reapplication process. This will begin with the reapplication for coverage under the next general permit cycle as these regulations will not be effective at the time in which reapplications for coverage are due to be submitted for coverage under this general permit cycle.

This general permit provides that each MS4 operator will annually select a minimum of four local activities in which to participate through promotion, sponsorship or other involvement. These activities are to be aimed at increasing public participation to reduce stormwater loads and improve water quality. "Local activities" does not restrict the geographical or jurisdictional locations available to the MS4 operator to participate. "Local activities" should be considered to be activities that are aimed at addressing impacts to surface waters to which the MS4 contributes, both immediately or farther downstream.

Comment [lgk2]: Only if EPA's comments in the draft permit are addressed.

### 3. Illicit discharge detection and elimination.

This general permit revises the descriptive approach taken in previous general permit cycles in illicit discharge detection and elimination to a prescriptive approach that details the expectations and requirements, including the minimum number of sites for screening, for each MS4 program. As a result of the implementation of this prescriptive approach in the body of the general permit, the TMDL special condition for outfall reconnaissance in the expiring general permit has not been included in this general permit cycle.

This general permit requires the completion of all outfall maps within 48 months of issuance of coverage under this general permit. This general permit condition includes completion of the mapping of outfalls in any urbanized areas newly designated as a result of the 2010 U.S. Census.

**Comment [KWA3]:** Update this and other sections of fact sheet based on comments on Tables 1 and 2 in proposed regs, or else provide justification in fact sheet as to how the schedules set forth in the permit meet the MEP standard.

### 4. Construction site stormwater runoff control.

This general permit establishes the minimum standards for erosion and sediment control programs established under Minimum Control Measure 4 as consistent with state statute and regulations. The Virginia Erosion and Sediment Control Law (§10.1-560 et. seq.) and attendant regulations address plans review, site inspection, and program administration including enforcement for land-disturbing activities equal to or greater than 10,000 square feet. These requirements also establish minimum training and certification for staff in the areas of plans review, administration, and inspection.

The Chesapeake Bay Preservation Act reduces the regulatory size threshold to equal to or greater than 2,500 square feet in areas designated by the locality as regulated under the Chesapeake Bay Preservation Act.

This general permit also requires that the MS4 operator continue implementation of a more restrictive program that requires erosion and sediment controls on land-disturbing activities greater than 2,500 square feet where the MS4 operator has determined additional water quality protection is warranted. The MS4 operator also authorizes the ability for the MS4 operator to require more stringent erosion and sediment controls where it finds it necessary, provided the requirements are consistent with the authorizing statute.

This general permit also requires that MS4 operator's large and small construction activities obtain separate general permit coverage and requires the MS4 operator to ensure that all large and small construction activities have obtained such coverage.

Finally, this general permit requires that the MS4 operator address discharges from unpermitted on-going large and small construction activities and non-sediment discharges from large and small construction activities as illicit discharges.

5. Post-construction stormwater management in new development and development on prior developed lands.

This general permit continues to implement the Commonwealth's iterative strategy to address the impacts of stormwater runoff from urbanization. Since 1988, total phosphorus has been Virginia's keystone pollutant used to determine water quality design requirements as a result of new and redevelopment. Phosphorus was chosen by Virginia to allow consistent application of performance based water quality criteria. It was also selected because it exhibits some of the characteristics of particulate pollutants, as well as those of soluble pollutants, making it a good indicator of urban pollutants in general.

In 1988, the Commonwealth passed the Chesapeake Bay Preservation Act (CBPA) requiring localities in Tidewater Virginia to implement water quality protection programs for new development and redevelopment on certain lands designated by localities. Regulations under the CBPA statute established an average land cover condition equivalent to 16% impervious cover with corresponding phosphorus loading rates of 0.45 lbs./ac/yr for new impervious acres and a 10% reduction in the existing load for prior developed lands. The 0.45 lbs./ac/yr design criteria was developed as a relative phosphorus rate equivalent to the discharge from forest cover, pasture land, conservation tillage, and conventional tillage for lands in the Chesapeake Bay watershed as published in Virginia's Chesapeake Bay Initiatives: First Annual Progress report (September 1985).

The average land cover condition determined the regulatory level of stormwater control implementation. As a result, post-construction runoff from lands designated in the Chesapeake Bay Preservation Area Designation and Management Regulations under the CPBA statute were designed to ensure no increase in the phosphorus load as developed equivalent to 1985 average land use from undeveloped lands.

In 1998, the separate Virginia Stormwater Management Regulations were amended to reflect the continued evolution in the definition and role of stormwater. The technical criteria established as part of the amendment addressed, not only water quality but stream channel erosion and flooding, as well, in order to address the hydrologic stability of downstream receiving water based on peak discharge rate. The 1998 regulatory modifications applied not only to localities in Tidewater Virginia, such as the MS4 operator, but also to voluntary stormwater programs adopted throughout the state.

In 2004, the Virginia General Assembly transferred the NPDES municipal and construction stormwater permitting authority to the Virginia Soil and Water Conservation Board and mandated that the Board develop minimum post-construction stormwater management regulations for localities that, among other conditions, require that the regulations (1) maintain an after-development runoff rate of flow and characteristics that replicate, as nearly as practicable, the existing predevelopment runoff characteristics and site hydrology, or (2) improve upon the contributing share of the existing predevelopment runoff characteristics and site hydrology if stream channel erosion or localized flooding is an existing predevelopment condition. As well, the regulations encourage low impact development designs, regional and watershed approaches, and nonstructural means for controlling stormwater. In addition, as a result of legislative action, post-development design criteria became mandatory for all regulated land-disturbing activities under state regulation. The design criteria were



implemented in conjunction with the General Permit for Stormwater Discharges from Construction Activities (CGP). However, regulations that detailed the requirements for MS4s did not become final until September 2011 after significant public participation and comment.

This general permit requires the MS4 operator to consistently implement the 2011 stormwater management regulations. In order to coordinate implementation efforts between MS4s and the regulatory authority, the regulation designates a start date consistent with reissuance of the CGP, expected to be July 1, 2014. Under this general permit, the MS4 operator is required to update its ordinances and procedures to be consistent with the regulations. Local plan review, inspection and enforcement is mandated through these regulations and will ensure that erosion and sediment control plans and post development stormwater management plans are reviewed and approved by the MS4 operator prior to CGP coverage being issued by the Commonwealth. Additionally, as a result of implementation of these regulations through ordinance, the MS4 operator will have the responsibility to ensure implementation of construction activities' stormwater pollution prevention plans and the federal Effluent Limitation Guidelines for construction activities. Before the MS4 operator implements its program, it must submit its implementation plan to the Board for approval as specified by the regulations.

Effective with the MS4 operator's implementation of the 2011 stormwater management regulations, the mechanism by which it determines post-development runoff compliance will completely change. Water quality design calculations will no longer be based simply upon pre- and post-development pollutant loads from the first ½-inch of runoff from impervious surfaces and the reductions based on an average cover land condition. Instead, post-development water quality design will be based on the concept of runoff volume reduction from the first 1-inch of rainfall on the entire site. The new Virginia Runoff Reduction Method compliance calculation procedure categorizes site land covers as either: (1) forest and open space, (2) managed turf and disturbed areas, or (3) impervious surfaces. The new phosphorus load threshold is 0.41 lb/ac/yr, corresponding to an average watershed imperviousness of 10% (based on the Center for Watershed protection's Modified Impervious Cover Model). The equivalent phosphorus load was based on discussion regarding the impact of impervious cover on and required protections for local receiving waters. The water quality design criteria is based on the 60% forest cover, 30% managed turf, and 10% impervious cover, incorporating all three land cover conditions now being addressed in the new methodology.

In addition, the water quality protection requirements for redevelopment have been modified. The previous regulations required that the phosphorus load from the site as previously developed must be reduced by 10% after redevelopment. The modified regulations include two different requirements, depending on the amount of land disturbance. If the area of disturbance is greater than or equal to one acre, the original phosphorus load must be reduced 20%. If the disturbed area is less than one acre, the original load must be reduced 10%.

It is not appropriate to compare the water quality design criteria based on average land cover and the runoff reduction design criteria because the method of calculation, the design event, and the method of compliance are different. One does not equate to the other.

The 2011 regulation modifications also change the methodology that the MS4 operator uses to determine required runoff quantity control. Effective with implementation under this permit, the MS4 operator will review quantity control based on volume-based hydrology or “energy balance” rather than just peak discharge rates. The principal of energy balance is that the product of the pre-development peak flow rate and runoff volume should be proportional to the same product for the post-development condition. For natural channels, the regulations also call for an improvement factor. As a result, the discharge hydrographs from the water quantity designs approved by the MS4 operator

will resemble those found in Figure 1 for Post-development Energy Balance and will not just be based on peak rate discharges.

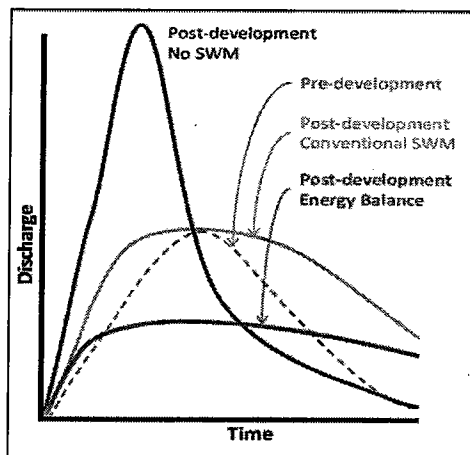


Figure 1: Varying hydrographs based on level of stormwater quantity controls

The 2011 modified stormwater management regulations also address grandfathering of future projects that have already initiated preliminary designs and/or have received local zoning or other approvals based on the older design criteria. Projects that have a currently valid proffered conditional zoning plan, preliminary or final subdivision plat, preliminary or final site plan or zoning with a plan of development, or any document determined by the locality as equivalent thereto and approved by a locality prior to July 1, 2012 but that does not obtain a CGP by July 1, 2014 may complete design and construction using the previous design criteria, provided the construction is completed by July 1, 2019. As a condition of this general permit, the MS4 operator must identify those projects that are authorized by the regulation to use the older design criteria.

#### 6. Pollution prevention/good housekeeping for municipal operations.

Minimum Control Measure 6 has been modified significantly in this general permit. Conditions in previous general permits have been descriptive in nature, which led to unclear expectations for both the regulated communities and regulators. It has also led to inconsistent program implementation across the MS4 universe. This general permit takes a more prescriptive approach to pollution prevention and good housekeeping. As a result during this permit cycle, MS4 operators will

- Develop and implement written guidelines for daily operations and maintenance.
- Develop and implement individual stormwater pollution prevention plans on composting facilities; (ii) equipment storage and maintenance facilities; (iii) materials storage yards; (iv) pesticide storage facilities; (v) public works yards; (vi) recycling facilities; (vii) salt storage

facilities; (viii) solid waste handling and transfer facilities; and (viii) vehicle storage and maintenance yards.

- Develop and implement nutrient management plans on all MS4 operated lands where nutrients are applied to a contiguous area greater than one acre.
- Greatly upgrade the municipal training program to increase staff awareness and expectations. The permit lists specific training forums (e.g., emergency response to spills); however, if the MS4 operator does not have staff that implements that particular requirement, training is not required.

**Comment [KWA4]:** Ph II WIP includes urban nutrient management on 43% of all pervious urban lands, not just state- and operator-owned or within an MS4. Recommend explaining how will fully achieve implementation levels called for in WIP and assumed within the Bay TMDL allocations

### ***C. Special Conditions: TMDL Wasteload Allocations***

#### **Special Conditions for an approved TMDL other than the Chesapeake Bay TMDL**

This general permit requires that pollutants identified in TMDL wasteload allocations be addressed through the development and implementation of TMDL Action Plans. This permit also requires that MS4s develop TMDL Action Plans for pollutants identified in TMDLs approved after permit issuance if the impairment was included in the 2012 303(d)/(305(b) Integrated Report and/or the report identified that the TMDL would be developed during this permit cycle. With this general permit taking a much more prescriptive approach in the minimum control measures (e.g., numeric screening requirements in minimum control measure 3), the requirements for the TMDL Action Plans have been simplified in order to maximize flexibility in their development and implementation. However, the ultimate endpoint that MS4 discharges do not cause or contribute to violations of WQS and that MS4 discharges are consistent with the assumptions and requirements of the TMDL wasteloads has not changed. MS4 operators must consider these ultimate endpoints in the development, implementation, updating, and evaluation of their TMDL Action Plans.

**Comment [KWA5]:** Must be for any TMDL approved at least 18 months prior to the end of the permit term, or justification should be provided in fact sheet for why longer schedule still meets the MEP standard

Given the complexity in TMDL Action Plan development and the relationship between stormwater and TMDLs, this general permit provides sufficient time to update or develop TMDL Action Plans. Adequate time is a concept consistent with the regulatory idea of using iterative strategies for MS4s over a period of permit cycles for the MS4 to meet the wasteload allocation.

A list of TMDLs in which MS4s have been assigned wasteload allocations as of October 31, 2012 is found in Table 1. The TMDL reports can be found at:  
<http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/TMDL/TMDLDevelopment/ApprovedTMDLReports.aspx>.

Table 1: Watersheds Other Than The Chesapeake Bay with Approved TMDL Wasteload Allocations for MS4s				
<b>Lower James River Basin</b>	<b>Bleakhorn Creek, Bennett Creek, Knotts Creek</b>		<b>Approved</b>	<b>6/3/2010</b>
	Knotts Creek	Total Fecal Coliform		
	Bennett Creek	Total Fecal Coliform		
	Bleakhorn Creek	Total Fecal Coliform		
<b>Potomac River Basin</b>	<b>Bull Run</b>		<b>Approved</b>	<b>9/26/2006</b>
	Bull Run	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>Potomac River Basin</b>	<b>Catoctin Creek Watershed</b>		<b>Approved</b>	<b>5/31/2002</b>
	Catoctin Creek	Total Fecal Coliform		
<b>Potomac River Basin</b>	<b>Cedar Run and Licking Run Watersheds</b>		<b>Approved</b>	<b>7/6/2004</b>
	Cedar Run	Total Fecal Coliform		
<b>New River Basin</b>	<b>Chestnut Creek Watershed</b>		<b>Approved</b>	<b>6/7/2006</b>
	Chestnut Creek	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>Lower James River Basin</b>	<b>Chickahominy River and Tributaries</b>		<b>Approved</b>	<b>9/19/2012</b>
	Chickahominy River and Tributaries	Escherichia coli		
<b>Chowan River Basin</b>	<b>Chowan River Watershed - Tidal</b>		<b>Approved</b>	<b>9/27/2005</b>
	London Bridge Creek and Canal #2	Total Fecal Coliform		
	West Neck Creek, Upper	Enterococcus		
<b>Lower James River Basin</b>	<b>Chuckatuck Creek and Brewers Creek</b>		<b>Approved</b>	<b>7/9/2010</b>
	Chuckatuck Creek and Brewers Creek	Total Fecal Coliform		

Table 1: Watersheds Other Than The Chesapeake Bay with Approved TMDL Wasteload Allocations for MS4s				
<b>Clinch-Powell River Basin</b>	<b>Clinch River Watershed</b>		<b>Approved</b>	<b>4/26/2004</b>
	Clinch River	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>New River Basin</b>	<b>Crab Creek Watershed</b>		<b>Approved</b>	<b>8/10/2004</b>
	Crab Creek	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>Potomac River Basin</b>	<b>Difficult Run</b>		<b>Approved</b>	<b>11/7/2008</b>
	Difficult Run	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>Potomac River Basin</b>	<b>Difficult Run</b>		<b>Approved</b>	<b>11/7/2008</b>
	Difficult Run	Escherichia coli		
<b>Lower James River Basin</b>	<b>Elizabeth River Watershed</b>		<b>Approved</b>	<b>7/20/2010</b>
	Paradise Creek	Enterococcus		
	Lafayette River, Upper	Enterococcus		
	Lower and Upper Western Branch, Elizabeth River	Enterococcus		
	Upper Mainstem, Lower Southern Branch, Lower Eastern Branch Elizabeth River, Broad Creek, Indian River	Enterococcus		
<b>Potomac River Basin</b>	<b>Goose Creek and Little River Watersheds</b>		<b>Approved</b>	<b>4/26/2004</b>
	Goose Creek	Benthic-Macroinvertebrate Bioassessments (Streams)		

Table 1: Watersheds Other Than The Chesapeake Bay with Approved TMDL Wasteload Allocations for MS4s				
<b>Lower James River Basin</b>	<b>Hoffler Creek, Cities of Portsmouth and Suffolk</b>		<b>Approved</b>	<b>12/14/2011</b>
	Hoffler Creek	Enterococcus		
<b>Potomac River Basin</b>	<b>Hunting Creek, Cameron Run, Holmes Run</b>		<b>Approved</b>	<b>11/10/2010</b>
	Holmes Run	Total Fecal Coliform		
	Hunting Creek	Total Fecal Coliform		
	Cameron Run	Total Fecal Coliform		
<b>Lower James River Basin</b>	<b>James River - Hopewell to Westover</b>		<b>Approved</b>	<b>7/10/2008</b>
	Bailey Bay, Bailey Creek, Cattail Creek	Escherichia coli		
	Bailey Creek	Escherichia coli		
	James River	Escherichia coli		
<b>Lower James River Basin</b>	<b>James River and Tributaries</b>		<b>Approved</b>	<b>11/4/2010</b>
	Almond Creek	Total Fecal Coliform		
	Tidal James River	Escherichia coli		
	Lower James River	Total Fecal Coliform		
	Falling Creek	Total Fecal Coliform		
	No Name Creek	Total Fecal Coliform		
	Gillies Creek	Total Fecal Coliform		
	Goode Creek	Total Fecal Coliform		
	Reedy Creek	Total Fecal Coliform		
<b>Lower James River Basin</b>	<b>James River and Tributaries - Lower Piedmont Region</b>		<b>Approved</b>	<b>6/11/2008</b>
	Fine Creek	Total Fecal Coliform		

Table 1: Watersheds Other Than The Chesapeake Bay with Approved TMDL Wasteload Allocations for MS4s				
<b>Middle James River Basin</b>	<b>James River Watershed (Lynchburg)</b>		<b>Approved</b>	<b>12/4/2007</b>
	Blackwater Creek	Escherichia coli		
	Fishing Creek	Escherichia coli		
	Ivy Creek	Escherichia coli		
	James River	Escherichia coli		
	Burton Creek	Escherichia coli		
	Judith Creek	Escherichia coli		
	Tomahawk Creek	Escherichia coli		
<b>Lower James River Basin</b>	<b>James River, Warwick River</b>		<b>Approved</b>	<b>2/29/2008</b>
	Deep Creek	Total Fecal Coliform		
	Baptist Run	Total Fecal Coliform		
	James River, Warwick River	Total Fecal Coliform		
	Skiffes Creek	Total Fecal Coliform		
<b>Shenandoah River Basin</b>	<b>Lewis Creek Watershed</b>		<b>Approved</b>	<b>8/2/2006</b>
	Lewis Creek	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>Clinch-Powell River Basin</b>	<b>Lick Creek, Laurel Branch, Cigarette Hollow</b>		<b>Approved</b>	<b>4/10/2008</b>
	Lick Creek	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>New River Basin</b>	<b>Little River Watershed</b>		<b>Approved</b>	<b>3/14/2012</b>
	Little River and Tributaries	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>York River Basin</b>	<b>Mechumps Creek</b>		<b>Approved</b>	<b>10/21/2004</b>
	Mechumps Creek	Total Fecal Coliform		

Table 1: Watersheds Other Than The Chesapeake Bay with Approved TMDL Wasteload Allocations for MS4s				
<b>Holston River Basin</b>	<b>Middle Fork Holston River Watershed</b>		<b>Approved</b>	<b>4/12/2010</b>
	Middle Fork Holston River	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>Shenandoah River Basin</b>	<b>Middle River and Upper South River Watersheds</b>		<b>Approved</b>	<b>8/10/2004</b>
	Christians Creek	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>Shenandoah River Basin</b>	<b>Mill Creek Watershed</b>		<b>Approved</b>	<b>6/5/2006</b>
	Mill Creek	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>Lower James River Basin</b>	<b>Mill Creek, Powhatan Creek Watersheds</b>		<b>Approved</b>	<b>4/28/2009</b>
	Mill Creek	Enterococcus		
	Powhatan Creek	Enterococcus		
	Powhatan Creek	Total Fecal Coliform		
<b>Potomac River Basin</b>	<b>Neabsco Creek Watershed</b>		<b>Approved</b>	<b>7/10/2008</b>
	Neabsco Creek	Total Fecal Coliform		
<b>Chowan River Basin</b>	<b>Northwest River Watershed</b>		<b>Approved</b>	<b>4/26/2011</b>
	Northwest River	Oxygen, Dissolved		
<b>Potomac River Basin</b>	<b>Occoquan River watershed</b>		<b>Approved</b>	<b>11/15/2006</b>
	Broad Run (1)	Total Fecal Coliform		
	Occoquan River	Total Fecal Coliform		
	Bull Run	Total Fecal Coliform		
	Popes Head Creek	Total Fecal Coliform		



Table 1: Watersheds Other Than The Chesapeake Bay with Approved TMDL Wasteload Allocations for MS4s				
<b>Shenandoah River Basin</b>	<b>Opequon and Abrams Creek Watersheds, Aquatic Life</b>		<b>Approved</b>	<b>2/18/2004</b>
	Abrams Creek	Benthic-Macroinvertebrate Bioassessments (Streams)		
	Lower Opequon Creek Watershed and Tributaries	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>Shenandoah River Basin</b>	<b>Opequon and Abrams Creek Watersheds, Bacteria</b>		<b>Approved</b>	<b>2/18/2004</b>
	Abrams Creek	Total Fecal Coliform		
<b>Lower James River Basin</b>	<b>Pagan River and Jones Creek</b>		<b>Approved</b>	<b>2/12/2008</b>
	Pagan River	Total Fecal Coliform		
	Pagan River and Jones Creek	Total Fecal Coliform		
<b>New River Basin</b>	<b>Peak Creek Watershed</b>		<b>Approved</b>	<b>8/30/2004</b>
	Peak Creek	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>Potomac River Basin</b>	<b>Popes Head Creek</b>		<b>Approved</b>	<b>9/26/2006</b>
	Popes Head Creek	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>York River Basin</b>	<b>Queen Creek, King Creek, Felgates Creek</b>		<b>Approved</b>	<b>4/17/2008</b>
	Queen Creek	Total Fecal Coliform		
	King Creek	Total Fecal Coliform		
	Felgates Creek	Total Fecal Coliform		

Table 1: Watersheds Other Than The Chesapeake Bay with Approved TMDL Wasteload Allocations for MS4s

<b>Middle James River Basin</b>	<b>Rivanna River Watershed</b>		<b>Approved</b>	<b>6/11/2008</b>
	Rivanna River	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>Middle James River Basin</b>	<b>Rivanna River Watershed</b>		<b>Approved</b>	<b>1/5/2009</b>
	Beaver Creek	Total Fecal Coliform		
	Meadow Creek	Total Fecal Coliform		
	Rivanna River, North Fork	Total Fecal Coliform		
	Rivanna River	Total Fecal Coliform		
<b>Roanoke River Basin</b>	<b>Roanoke (Staunton) River Watershed</b>		<b>Approved</b>	<b>4/9/2010</b>
	Roanoke River	Polychlorinated biphenyls		
	Peters Creek	Polychlorinated biphenyls		
	Tinker Creek	Polychlorinated biphenyls		
	Masons Creek	Polychlorinated biphenyls		
	North Fork Roanoke River	Polychlorinated biphenyls		
	South Fork Roanoke River	Polychlorinated biphenyls		
	Wolf Creek	Polychlorinated biphenyls		
	Roanoke River, UT (Upper)	Polychlorinated biphenyls		
	Goose Creek	Polychlorinated biphenyls		

Table 1: Watersheds Other Than The Chesapeake Bay with Approved TMDL Wasteload Allocations for MS4s				
<b>Shenandoah River Basin</b>	<b>Smith Creek Watershed</b>		<b>Approved</b>	<b>6/29/2004</b>
	Smith Creek	Benthic-Macroinvertebrate Bioassessments (Streams)		
	Smith Creek	Total Fecal Coliform		
<b>Shenandoah River Basin</b>	<b>South River Watershed</b>		<b>Approved</b>	<b>12/3/2009</b>
	South River	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>Shenandoah River Basin</b>	<b>Spout Run and Tributaries</b>		<b>Approved</b>	<b>6/3/2010</b>
	Spout Run	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>Clinch-Powell River Basin</b>	<b>Straight Creek, Stone Creek and Tributaries</b>		<b>Approved</b>	<b>6/8/2006</b>
	Straight Creek, Stone Creek and Tributaries	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>New River Basin</b>	<b>Stroubles Creek Watershed</b>		<b>Approved</b>	<b>1/28/2004</b>
	Stroubles Creek	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>Potomac River Basin</b>	<b>Tidal Four Mile Run Watershed</b>		<b>Approved</b>	<b>6/14/2010</b>
	Tidal Four Mile Run	Escherichia coli		
<b>Rappahannock River Basin</b>	<b>Tidal Freshwater Rappahannock River Watershed</b>		<b>Approved</b>	<b>5/5/2008</b>
	Rappahannock River, Tidal Fresh	Total Fecal Coliform		

Table 1: Watersheds Other Than The Chesapeake Bay with Approved TMDL Wasteload Allocations for MS4s				
<b>Roanoke River Basin</b>	<b>Tinker Creek Watershed</b>		<b>Approved</b>	<b>8/5/2004</b>
	Carvin Creek	Total Fecal Coliform		
	Glade Creek	Escherichia coli		
	Laymantown Creek	Total Fecal Coliform		
	Lick Run	Escherichia coli		
	Tinker Creek	Escherichia coli		
<b>Roanoke River Basin</b>	<b>Upper Roanoke River Watershed</b>		<b>Approved</b>	<b>8/2/2006</b>
	Roanoke River	Total Fecal Coliform		
	Ore Branch	Total Fecal Coliform		
	Wilson Creek	Escherichia coli		
<b>Roanoke River Basin</b>	<b>Upper Roanoke River Watershed</b>		<b>Approved</b>	<b>5/10/2006</b>
	Roanoke River	Benthic-Macroinvertebrate Bioassessments (Streams)		
<b>Holston River Basin</b>	<b>Wolf Creek Watershed</b>		<b>Approved</b>	<b>4/8/2010</b>
	Wolf Creek	Benthic-Macroinvertebrate Bioassessments (Streams)		
	Wolf Creek	Total Fecal Coliform		
<b>Potomac River Basin</b>	<b>Tidal Portions of the Potomac River</b>		<b>Approved</b>	<b>4/11/2008</b>
	Tidal Portions of the Potomac River	Polychlorinated biphenyls		
<b>Potomac River Basin</b>	Accotink Creek	Benthic-Macroinvertebrate Bioassessments (Streams)		
	Accotink Creek	Flow		

### Chesapeake Bay TMDL

This general permit is designed to strengthen the MS4 operator's MS4 program in order to protect all surface waters. As a result, by implementing the main body of the general permit, the MS4 operator will provide increased protection to the Chesapeake Bay in a manner consistent with Virginia's Phase I and Phase II Watershed Implementation Plan (WIP) commitments accepted by EPA. The wasteload allocations for regulated stormwater in the Chesapeake Bay TMDL established in December 2010 assumes the implementation of commitments within the Phase I WIP. Virginia developed the Phase II WIP to update the Phase I WIP and provide more information on strategies at the local level. The pollutant reductions called for in the Phase II WIP represent the same level of effort as the Phase I WIP and, therefore, the Bay TMDL.

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Comment [KWA6]: Recommend adding this language to clarify the relationship between the WIPs and the Chesapeake Bay TMDL.

### **Control of Transitional Loads and Accounting for Growth from New Development**

Implementation of the Erosion and Sediment Control (ESC) Law, the Stormwater Management Act, and the Chesapeake Bay Preservation Act and their attendant regulations are three key vehicles that the permit uses to address nutrient and sediment loadings during construction and post-construction. Further, these regulatory programs represent a framework that will provide the State and EPA with reasonable assurance that the pollutant reductions necessary to address the Chesapeake Bay TMDL will be met.

The general permit requires that the erosion and sediment control plans be consistent and compliant with the Virginia Erosion and Sediment Control Law and its attendant regulations. Doing so ensures appropriate plan review by certified plan reviewers and implementation of a set inspection schedule consistent with State regulation for all regulated land disturbing activities regulated under the Law.

By implementing the requirements for the control of post-construction runoff from new and redevelopment, this general permit implements the Commonwealth's strategies for growth.

The new statewide DCR stormwater management regulations will address the sediment and nutrient loads and stormwater quantity issues with new development and redevelopment over the entire bay watershed as described in this fact sheet regarding Post Construction Runoff from Areas of New Development and Significant Redevelopment. Some MS4 operators adopted average land cover conditions greater than 16% as allowed by past regulation. This general permit requires that the MS4 operator offset the difference between the pollutant load generated for a 16% average land cover condition and the alternate adopted land cover condition for new loads.

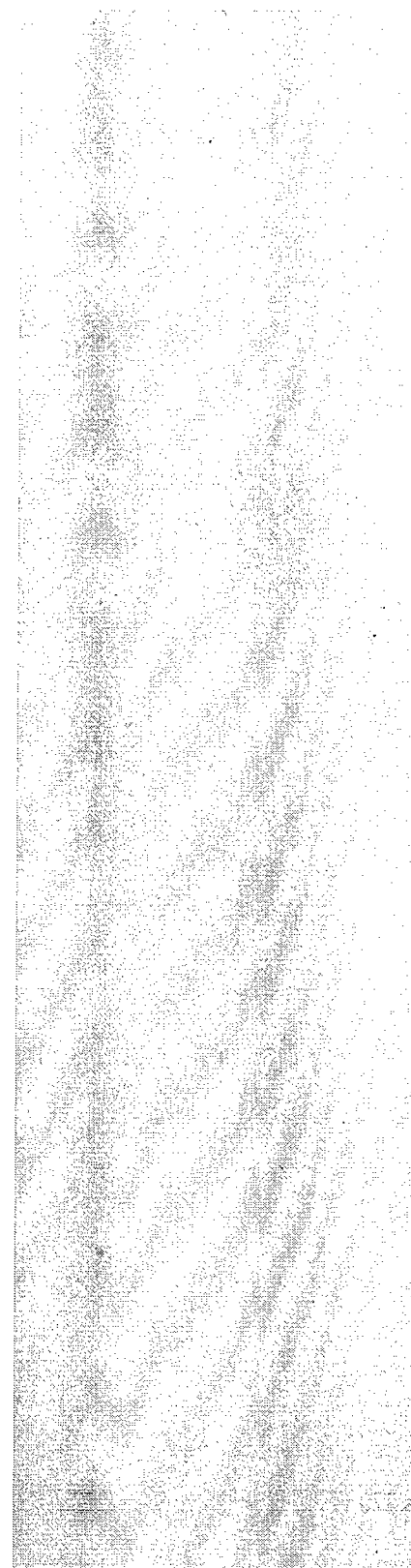
Comment [KWA7]: Need to explain how. Any offsets need to be protective of local water quality.

### **Pollutant of Concern; Loadings from Existing Sources**

This general permit requires the MS4 operator to reduce the pollutant loadings for the pollutants of concern from existing sources as part of its Chesapeake Bay TMDL Action Plan in a manner consistent with Virginia's Chesapeake Bay Watershed Implementation Plan (WIP). Existing sources are defined as pervious and impervious urban lands developed prior to July 1, 2009. Calculations are based on an average tributary loading rate. MS4 operators are required to select the appropriate table in the general

Comment [KWA8]: Recommend explaining that this is the end of the 2009 progress run period, which was the last progress run that was calculated prior to the establishment of the Bay TMDL. Therefore, also known as the progress "baseline" for the Chesapeake Bay TMDL.

permit to generate their required load reductions. Figure 2 shows the boundary for each individual basin. Table 2 identifies the specific 6<sup>th</sup> order hydrologic unit codes that are to be included with each basin. Watersheds with discharge directly to the western shore of the Chesapeake Bay were placed with the most appropriate basin for calculation.



In summary, Virginia committed in the WIP to require ~~Phase II [for all?]~~ all MS4 operators (and all urban lands) to:

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- 1) Implement sufficient BMPs on existing developed lands to achieve nutrient and sediment reductions equivalent to Level 2 (L2) scoping run reductions. The L2 scoping run is reductions beyond the 2009 progress loads and beyond nutrient urban management reductions.
  - a. Level 2 implementation equates to the following average load reduction from impervious regulated acres:
    - i. 9 percent of nitrogen loads;
    - ii. 16 percent of phosphorus loads; and
    - iii. 20 percent of sediment loads from impervious regulated acres.
  - b. Level 2 implementation equates to the following average load reduction from pervious regulated acres:
    - i. 6 percent of nitrogen loads;
    - ii. 7.25 percent of phosphorus loads; and
    - iii. 8.75 percent sediment loads.
- 2) Implement the necessary reductions to meet the L2 implementation levels within three full permit cycles (15 years).
- 3) Implement sufficient practices during the first permit cycle so as achieve a reduction in the loading rate equivalent to 5% of the difference between the 2009 progress load and the L2 implementation levels. The MS4 operator shall also review its authorities and adopt and modify the necessary ordinances as well as develop its resources in order to implement the necessary reductions, e.g., develop design protocols, operation and maintenance programs, site plan review criteria, inspection standards, and tracking systems during this first permit cycle.
- 4) Implementation of the remaining necessary reductions over the remaining two permit cycles.

The MS4 operator is required by this general permit to identify the acreages for both the pervious and impervious urban land uses as of July 1, 2009 and, then, utilize the table identified in the general permit to determine the total load reduction required and this permit cycle's required 5% reduction.

Additionally, the permittee should use the Watershed Model Phase 5.3.2, or some other tool or methodology that is approved by the department as consistent with the assumptions of the Bay TMDL in order to demonstrate compliance with the reductions. It is DCR's intention to develop additional guidance to address acceptable methods for permittees to demonstrate progress with the Chesapeake Bay TMDL.

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Comment [KWA9]: Recommended addition

This process is intended to insure ensure accuracy of the number of acres serviced by the MS4 and to allows for the calculation of reduction targets.

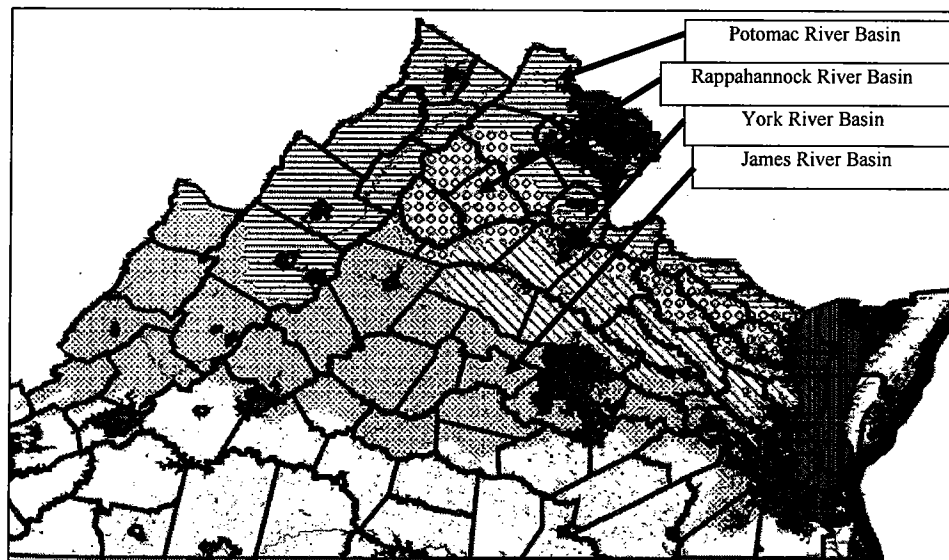


Figure 2: Chesapeake Bay River Basins applicable to this general permit. Areas in solid purple are included in a 2010 U.S. Census Urbanized Area.

Table 2: Classification of 6th Order Hydrologic Units (HUCs) by River Basin for use in calculation of existing load reductions in the Chesapeake Bay TMDL Action Plan

River Basin	6th Order Hydrologic Units (HUCs)
James River Basin	All James River HUCs and CB25-CB26
Potomac River Basin	All Potomac River HUCs and CB01-CB03
Rappahannock River Basin	All Rappahannock River HUCs and CB04-CB12
York River Basin	All York River HUCs and CB13-CB24

The MS4 operator is allowed to adjust the levels of reduction between pervious and impervious land uses within their service area and Chesapeake Bay segment level, provided the total pollutant load reduction is met. For example, the MS4 operator could implement a 5% nitrogen load reduction on impervious land uses by implementing a reduction strategy sufficiently greater than a 6% nitrogen load reduction on pervious land uses provided the total loads from both land uses are met. This general permit also authorizes the MS4 operator to participate in the Nutrient Credit Exchange Program as provided by state law.

Compliance with reduction in loading rate will be measured based on the total reductions required as determined by calculations defined by the general permit and the reported implementation of BMPs. As discussed above, the permittee should use the Watershed Model Phase 5.3.2, or some other tool or methodology that is approved by the department as consistent with the assumptions of the Bay TMDL

**Comment [KWA10]:** Must explain how. Any offsets, trades or credits must be certified by the appropriate state agency, demonstrate that they are consistent with all applicable TMDL wasteload and load allocations, and be protective of local water quality.

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in order to demonstrate compliance with the reductions. It is DCR's intention to develop additional guidance to address acceptable methods for permittees to demonstrate progress with the Chesapeake Bay TMDL.

Comment [KWA11]: Recommended addition